

REMARKS

Rejection of the Claims Under 35 U.S.C. §112, second paragraph

Issue 1:

The H atoms in the first formula in claim 1 are explicitly shown.

Issue 2:

Claim 18 is further clarified. The bridging group recited at the end of the claim refers to a divalent radical linking the secondary phosphine groups together, which forms the monovalent radical R₄₁ of the ditertiary diphosphine. This in context is clear.

Issue 3:

The Office Action alleges that in claim 43 the choice in defining “heterocycloaliphatic” in the last reply, which was supported by references, appears to be completely arbitrary. Applicants respectfully disagree. The references themselves do not use the term “heterocycloaliphatic.” However, they provide support to how one of ordinary skill in the art would understand the disputed term based on logical conclusions readily derivable from the material in the references.

Moreover, the specification provides consistent support for the meaning of “heterocycloaliphatic.” See page 13, lines 19-25, providing possible heterocycloalkyl and heterocycloalkyl-alkyl groups, each of which contains heteroatoms in the ring. The options provided by the Office Action for various possible meanings are not supported by the specification. The specification provides clear guidance to one of ordinary skill in the art regarding the meaning of this disputed term.

Issue 4:

The Office Action continues to reject the term “ditertiary diphosphine.”

Applicants’ statements from the last reply are further clarified herein. The bridging group “R” connecting both secondary phosphine groups “R₂P” can contain, e.g., hetero atoms, which is clearly evident, for example, from dependent claims pointed out by the Examiner, which “R” groups are then in fact not hydrocarbon residues. “R” is a bridging group, which is clear from the disclosure of the application, and both R₂P groups must bond to a carbon of said bridging group to fulfill the requirement (definition) of a ditertiary diphosphine.

This is how one of ordinary skill in the art would construe the claim language in view of the disclosure and in view of what is known in the art, e.g., see definitions provided with the last reply. Applicants' above explanation is correct and no other option can be reasonably selected other than Applicants' definition above regarding the meaning of the term in dispute.

The term ditertiary diphosphine has a clear and concise meaning, which is supported by the specification. See pages 19-29. One of ordinary skill in the art when construing the disputed term in context, in view of the description together with what is known in the art would understand its scope to be as discussed above.

The Office Action again repeats various incorrect selections for structures purported to be a ditertiary diphosphine. Structure (a) (t-butyl)PH-PH(t-butyl) is a diprimary diphosphane. Structure (b) (Methyl)₂P-P(Methyl)₂ is a dissecondary diphosphane. Structures (c) (Methyl)P=C=P(Methyl) and (d) (Methyl)P=CH-CH=P(Methyl) contain P/C double bonds (such as imines). Structure (e) (Methyl)P=P(Methyl) has a P/P double bond. Moreover, the Office Action has not provided any evidence that the various speculative structures fall either under the terms "ditertiary" or "diphosphine." No evidence is provided that any of the speculative structures are, if existent, named ditertiary diphosphines. Moreover, the compound (Methyl)₂-P-P(Methyl)₂ pointed to by the Office Action, for which a reference is cited, is a phosphane and not a phosphine, and according to IUPAC nomenclature is a dissecondary diphosphane. An incorrect nomenclature used in a reference is not proper evidence which would shown that a term defined in line with official nomenclature is ambiguous or wrong.

Moreover, it is important to note that the ditertiary diphosphines used in the process of this invention are ligands forming metal complexes with 5- to 10-membered rings. Absolutely none of the structures (a) to (e) can form 5- to 10-membered rings due to the number of atoms in the chain (2 or 3) or due to the stiffness of the P/C double bonds in structure (d).

The Office Action draws out a structure on page 4 and alleges applicants could as well have chosen this compound with two bridges and one terminal group. However, nothing in the record would lead one of ordinary skill in the art to take the depicted structure as a ligand of the present claims. One of ordinary skill in the art would have readily understood that in the depicted structure the complexing P atoms are opposite and cannot form a ring with the metal atom.

The Office Action alleges that “for all one knows, the tertiary refers to a carbon.” There is not basis for such an allegation, and applicants did not argue that a ditertiary diphosphine is a diphosphine that has, e.g., two, tertiary hydrocarbon residues. According to the specification the residues may be linear or branched alkyl, etc. (see page 19, line 21 to page 20, lines 10, especially page 19, line 25-26). The Office Action's allegations have no basis and ignore the disclosure of the specification. It is well established that claim terms should be interpreted as would be done by one of ordinary skill, not as a strained interpretation that would not be taken by anyone familiar with the art area. See *In re Gay*, 135 USPQ 311 (CCPA 1962), and *In re Frey*, 77 USPQ 116 (CCPA 1948).

Issue 5:

The specific complex acids recited in claim 48 are inserted into claim 19.

Issue 6:

Claims 1-13, 43, 45-48 are amended in accord with the disclosure in the paragraph bridging pages 9 and 10.

Issue 7:

Claims 1, 2, 4, 8-19, 29-31, 34-39, 45 and 48 are rejected for allegedly failing to comply with the written description requirement. The specification clearly and explicitly teaches on page 6, lines 17-18, that prochiral pterins are substituted either “in 6-position, 7-position, or in 6- and 7-position.” Specific substituents in the broadest teaching of the application are not recited. Thus, one of ordinary skill in the art would understand that applicants are teaching pterins that can have any substituent(s), including halogen, at the disclosed position(s). The teachings of the present application as a whole would be understood by those of ordinary skill in the art as reasonably conveying that applicants at the time of filing had possession of the claimed invention. Nothing to the contrary has been established by the USPTO. Merely bare allegations are made.

The Office Action alleges, that any substituent would include, for example, halogen, OH, etc. Then the Office Action inquires “where does the specification teach this?” The specification may not explicitly teach each and every embodiment of possible substituents;

nevertheless, the teachings of the application clearly convey to one of ordinary skill in the art, as it conveyed to the Examiner, that possible substituents include halogen, etc.

The Office Action also alleges that "the halogen substituent would not even be expected to survive this reaction." Applicants assume that by this reaction, hydrogenation is intended. Nothing other than this bare allegation is in the record. No evidence is provided for the unreasonable assumption that a halogen would be removed under hydrogenation conditions. The claimed process uses selective hydrogenation catalysts, which can be chosen so as to not split of a halogen.

Issue 8:

Claims 1, 2, 4, 8-19, 29-31, 34-39, 45 and 48 are rejected for allegedly not enabled for disubstituted starting materials in the 6-position or 7-position. Applicants do not believe that the claim language permits 2 substituents in the same position, e.g., 6,6-dimethyl. The claim language in context is clear that a substituent is present either in the 6- or 7-, or in the 6- and 7-positions. This is specially so because positions 6 and 7 are on an aromatic ring, with the carbon atoms in the 6 and 7 positions already having three bonds. Thus, only one bond is available for a substituent. Nevertheless, to further prosecution, the claims are clarified by reciting "monosubstituted."

Reconsideration is respectfully requested.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,
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